Rogue River-Siskiyou National Forest Transition Monitoring Plan - 2016

Element Table – May 6, 2016

Selected Plan Component	Monitoring Question	Monitoring Indicator	Potential Data Source and Responsible Position
(i) The status of select watershed conditions			
1. Functioning Watershed Condition	What is the status of the watersheds? Are watershed conditions functioning properly? Which watershed conditions are functioning properly and why? Which are functioning improperly and why? What are the trends in watershed conditions and function?	Trends in functioning condition for the watersheds	Watershed Condition Framework analysis and Database **Forest Hydrologist**
2. BMPs to Protect Water Quality Forest standard	What BMPs been implemented and are they effective at managing water quality consistent with the Clean Water Act? If needed, what corrective actions and adaptive management measures were implemented? Were they effective?	Results from BMP Annual monitoring protocols	BMP database **Forest Hydrologist**

(**ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.**			
3. Stream Temperature Maintain or enhance stream temperatures on the forest.	Are watersheds functioning properly with the focus on stream temperature to support desired fish habitat, including downstream habitat? Describe conditions and trends in watersheds. Which watersheds are not functioning properly and why?	Stream temperature on select streams on the forest	Observed and/or modeled stream temperatures obtained from NorWeST Stream Temperature Database (Oregon Coast unit) **Forest Hydrologist**

4. Aquatic Habitat Maintain or enhance stream habitat conditions to provide for desired aquatic habitat for both focal and T&E species. PACFISH and Northwest Forest Plan Riparian Reserve and ACS standards	Are streams functioning properly with the focus on stream habitat to support desired aquatic habitat, including downstream habitat? Which streams are not functioning properly and why? Have any trends been identified in habitat conditions in monitored streams and what are the trends? What S&Gs have been followed to protect riparian habitat?	Habitat parameters such as riffle to pool ratios, width to depth ratios, pebble counts, bank condition, large woody debris and other parameters collected during stream surveys.	Stream survey data on select Forest Streams, data stored in NRIS Watershed Condition Framework reporting NEPA project review to determine consistency with S&Gs (RR, RHCA, ACS, etc.) **Forest Fisheries Biologist**
5. Fuels Management Improvement in watersheds ecological condition for fuels characteristics and management.	Are forest fuels conditions functioning properly as determined by departure from desired forest fuels conditions? How many acres of the different plant association groups are at desired fuel levels and where are they located? What are the barriers to maintaining or improving conditions?	Identification of desired forest fuels conditions. Identification of desired fuels conditions. Acres treated by treatment type. Acres treated by treatment type by Wildland Urban Interface and Non-Wildland Urban Interface. Changes in fuel arrangements within treatment units and within watersheds.	FACTS database - Treatment acreages by treatment type, within WUI and Non-WUI, etc. Vegetation monitoring and potential use of LIDAR Qualitative narrative to evaluate risk on the existing landscape condition and movement towards a desired condition. **Forest Fuels Program Manager**

6. Desired Terrestrial Conditions are Properly Functioning Status of habitat and forest seral stage distribution in the landscape, including late successional and old growth forests.	What progress has been made toward maintaining and restoring resiliency? How are landscapes departed from historical range of variation? Are late seral habitats being maintained? Are early seral habitats adequately distributed across the landscape? Are fire-dependent communities being maintained?	Changes in seral stage distribution Assessment of desired seral stage distribution in landscape restoration projects Mid-closed stands treated to accelerate the development of late seral conditions or returned to early seral where needed Late-closed stands moved to late-open, as needed Meadow restoration treatments Re-introduction of fire on the landscape	FACTS database Legacy tree mortality PNW and I&D data by HUC5 GIS vegetation data; prescribed fire treatments and wildfire data; treatment information in FACTS, etc. Planned and/or implemented treatment acres by treatment type **Forest Silviculturist with** **Forest Fire Planner and Forest Ecologist**
7. Riparian Habitats Status of Riparian Areas / Wetlands, Streamside Management Units, and Flood Plains (Northwest Forest Plan Riparian Reserve, ACS and PACFISH standards)	Are habitats being protected in accordance with LRMP S&Gs at selected sites (PACFISH, NWFP and ACS)? What is the trend in riparian habitat conditions? Are restoration activities effective in maintaining / protecting riparian habitats?	Adherence in planning and implementation to riparian management standards for vegetation, grazing, and recreation management. Changes in riparian vegetation cover and species compositions.	Project implementation monitoring of RR/RHCA mitigations. NEPA project review Long-term effectiveness monitoring of select restoration projects. **Forest Fisheries Biologist with** **Forest Hydrologist and Forest Wildlife Biologist**

(iii) The status of focal species to assess the ecological conditions required under § 219.9.			
8. Marten, fisher, and Sierra red fox	What are the amounts of suitable habitat for these species and how have they changed?	Amount and distribution of habitat and changes over time Presence sampling in potential habitat throughout forest	GNN, stand exams, and other project level habitat measurements Camera stations and track surveys along pre-determined routes using approved protocols AFR telemetry work Coordination with PNW/PSW and Regional Carnivore Team **Forest Wildlife Biologist**

9. Oak Woodlands Biodiversity at the landscape scale; threatened by development,fire exclusion and invasive plants (particularly non-native annual grasses)	Are oak woodlands being affected by uncharacteristic fire intensities, encroachment from fire exclusion, invasive species (plants/pathogens), and OHV use? What levels of biodiversity, resiliency and overall ecological integrity is present in these systems?	Plant community richness indicators. Acres of oak woodland habitat treated for invasive plants and to address fire exclusion. Acres burned from natural and prescribed fires in relation to oak woodland stands. Fire effects measures	FACTS database GIS Analysis Using GNN Data Floristic and Habitat Inventories Invasive Plant Surveys BAER reports **Forest Botanist, Forest Fire Planner, Forest Wildlife Biologist**
10. Serpentine endemic plants and Darlingtonia wetlands Unique habitats of regional significance; biodiversity	Are known and mapped populations still extant? Have any species been extirpated from the forest? What are the population demographics and trends for these species? What is the distribution and health of Darlingtonia wetlands on the forest? What are the primary threats to these populations and how can threats be reduced?	Survey and monitoring of historical populations Census of plants in individual populations Inventories and mapping of fen habitats Species composition and richness changes in relation to climate change and succession Assessment of function in relation to range, timber, recreation (including OHV), mining, and other activities	NRM: TESP-IS database Historic survey and site reports Oregon Biological Inventory Center (ORBIC) database information Habitat models Trends in function of habitat: Conservation Strategy for Darlingtonia Fens Rapid Assessment protocol for fens **Forest Botanist**
11. Primary Cavity Nesters (woodpeckers) Snags in key habitat (e.g., late successional conifer and pine-oak)	What are the current snag densities and sizes on the forest? Are they represented well in all important plant groups? Are MIS S&Gs being followed? How are the amount of burned acres affecting or contributing to foraging and nesting habitat?	Snags – 5th field watershed by habitat type (DecAid) for key plant groups. Burned habitat – acres and locations Insect and disease tree mortality Presence sampling along established breeding bird survey routes	DecAid analysis for the forest has been completed. Tie to population / habitat analysis, baseline, updating annually. Annual breeding bird surveys across the forest. **Forest Ecologist and Wildlife Biologist**

12. Elk and Black-tail Deer Hiding cover and road densities are important, particularly in Habitat Management Areas. Amount and distribution of early seral foraging habitat is equally important.	What are the current vegetation cover percentages in Key Elk Areas and Big Game Management Areas and summer range; are they meeting S&Gs? If there are deficiencies, what is the cause? What are road densities? What factors contribute to big game disturbance and diminished habitat effectiveness?	Key Elk areas – hiding cover, road density, recreation impacts (trail mileages, use levels and capacity, user created trails, etc.) Road density by 6th field watershed and for Key Elk areas and summer range Early seral habitat by 5th code watershed and for summer and winter ranges, within limits of available vegetation data accuracy	Modeled habitat, including changes in timber stand conditions from treatment and wildfire Select group of Key Elk areas monitored for user created trails and use over and above the modeled analysis Road densities from transportation monitoring Tie to population/habitat analysis, baseline, updating annually Vegetation seral classes based on GNN or LANDFIRE data **Forest Wildlife Biologist, Forest Ecologist**
13. Beaver Climate change adaptation	What is the availability of beaver habitat?	Beaver habitat – willow and other forage species – in riparian areas and occupancy Status and trends riparian vegetation cover and species compositions.	Stream and riparian habitat surveys **Forest Wildlife Biologist, Fisheries Biologist**
14. Insect Pollinators Terrestrial ecosystem function and diversity; distribution and condition of meadow and early seral habitat	What are the amounts of suitable habitat available and how is it changing over time?	Amount and distribution of habitat and changes over time. Presence/absence surveys Acres of habitat enhancement	Surveys/sampling per protocol for various sensitive species at known and suspected sites on Forest **Forest Wildlife Biologist, Forest Botanist**
15. Abandoned Mines, Caves and Bats Townsend's big-eared bat (caves and mine adits) Pallid bat (snags) Fringed Myotis, General bats (snags)	Is cave and abandoned mine habitat being protected? Are mitigations effective to prevent White nose syndrome? What are human impacts to cave habitat where access is granted and allowable? Are snag guidelines being met?	Implementation of mitigation measures for white nose syndrome and surveys for presence of infections Condition of important habitat components Habitat for bats, including: • Summer maternity • Winter hibernacula • Protection of habitat DecAID analysis for snags at 5th field watershed for key plant groups	Number of mine entrance gates installed that protect habitat Effectiveness monitoring for habitat protection by preventing access, preserving surrounding habitat, and assessing damage if access allowed Number of bat boxes installed Biannual Townsends big-eared bat monitoring data and annual bat grid sampling (with BLM) Might be doing acoustic monitoring **Forest Wildlife Biologist with Abandoned Mines Specialist, Forest Ecologist**

16. Klamath Mountain Province (KMP) and Oregon Coast (OC) Steelhead	Is anadromous fish habitat being maintained or improved?	Changes in steelhead distribution and abundance across the forest Stream and riparian habitat conditions	Distribution surveys (redd surveys, adult surveys, electrofishing, snorkeling, etc.) Level II Stream Inventory Data Regional fish distribution maps (new data or changes in distribution). Regional fish barrier database (showing habitat accessible due to barrier removal) **Forest Fisheries Biologist**
17. Fire-dependent plant species of conservation concern	What are the effects of fire exclusion on plant species of conservation concern that rely on fire for various reasons? Are viable populations being maintained? What is the demographic trend?	Demographic analysis of known populations Acres burned or treated in relation to current distribution (new potential habitat) of species	Habitat modeling Vegetation monitoring FACTS and Wildfire Reports **Forest Botanist**
(iv) The status of a select set of the ecological conditions required under § 219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.			
18. Northern spotted owls and marbled murrelet – NWFP key species Contributing to spotted owl and marbled murrelet recovery is a prime goal for the Rogue River-Siskiyou NF.	What is the amount of Nesting, Roosting, and Foraging (NRF) and dispersal habitat and how has it changed? What is the amount of marbled murrelet suitable habitat? Are barred owls invading spotted owl habitat and what are the trends?	Amount and distribution of NRF and dispersal habitat and changes over time Barred owl known sites Amount and distribution of murrelet habitat over time Nesting surveys and nesting success rates	Surveys associated with NEPA projects Spotted owl demographic study areas in Cascade and Klamath Mountains NRF and dispersal habitat tracked through FWS for Programmatic Biological Assessment at the forest level Barred owl known sites Review of NEPA project BAs and BOs for treatment impacts **Forest Wildlife Biologist**
19. Gray wolves	Status of wolf den sites and rendezvous sites on the forest	Number of known reproductive wolf packs on the forest	Review of NEPA project BAs and BOs for treatment impacts Regional carnivore monitoring and wolf-specific monitoring coordination with the USFWS **Forest Wildlife Biologist**

20. SONCC Coho	Is critical habitat for SONCC coho being maintained and improved?	Changes in coho distribution and abundance across the Forest Stream and riparian habitat conditions	Distribution surveys (redd surveys, adult surveys, electrofishing, snorkeling, etc.) Level II Stream Inventory Data Regional fish distribution maps (new data or changes in distribution). Regional fish barrier database (showing habitat accessible due to barrier removal) **Forest Fisheries Biologist**
21. Endangered plants McDonald's rockcress (*Arabis macdonaldiana*) and Gentner's fritillaria (*Fritillaria gentneri*)	What is the current distribution and population demographics for these species on the RRSNF? What is the status and ecological function of habitat for these species across the forest? What, if anything, is threatening the persistence of these species on the landscape?	Census of known populations Plant community trends from known populations Ecological integrity assessment in relation to populations (are invasive plants, succession, fire exclusion, OHV use, mineral and/or timber extraction affecting populations?)	NRM: TESP-IS database Long term monitoring reports Habitat modeling Inventories and surveys of habitat Taxonomic treatments and revisions **Forest Botanist**
(v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.			
22. Recreation Settings and opportunities provide high visitor satisfaction, meeting current and future public demands in sustainable ways. Assets include trails, trailheads, developed sites, and dispersed sites for motorized and non-motorized summer and winter use.	Are the current recreation settings and opportunities moving toward desired recreation settings and opportunities? How have the recreation settings and opportunities trended? What is the trend in visitor use and satisfaction? Are water and soil resources being protected from recreational uses?	Recreation opportunity spectrum: acres, location, and distribution (mapped) Satisfaction levels from USDA Forest Service national visitor use monitoring survey results by single administrative unit; every 5 years new data is collected Satisfaction levels gathered through site data collection and visitor comments Increase in number of dispersed sites; concentrated use area; user created roads and trails	GIS review: site type/opportunities by recreation setting class NVUM reporting, every 5 years, release base year info Field observation data collected including portal use and other field gathering efforts (such as winter ranger, field ranger, recreation staff reporting) BMP recreational site monitoring on select sites **Forest Recreation Program Manager**
23. Special Use Authorizations Recreation opportunities not provided by the Forest Service are provided to a diversity of users through special use authorizations.	Are people satisfied when using the forest through permitted service providers, including recreation events, resorts, outfitter guides services, and campground operations? Are permit holders providing a quality experience to a diversity of users?	Satisfaction levels gathered through permit data collection and visitor comments Percent compliance with terms of permit Diversity of customers served	Reporting results on special use permit inspections, performance and compliance, and civil rights compliance. File review based on SUDS query results (e.g. complaints, diversity of customers served - from Title VI reviews, etc) Information stored in the Special Use Database System (SUDS) **Forest Recreation Program Manager**

(vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.			
24. Climate Change Trends and threats to the forest from changing climate	What are the plan area vulnerabilities? What stressors are affecting the plan area? Are there trends in stressors, and, if so, how are they affecting the plan area?	Changes in extent, duration and seveity of disturbance, such as insect and disease, wildfire, etc. Changes in timing and amounts of stream flows and stream temperatures. Changes in vegetation location, composition and structures.	Climate change vulnerability assessment Watershed and terrestrial condition monitoring including stream temperature modeling Changes in precipitation, snowpack, etc. Gauge stations for flow regimes on selected streams Length and severity of fire season on the forest RAWS data station – precipitation, snowpack (NRCS), fuel moistures **Forest Health Protection Program Managers** **Invasive Species Program Manager** **Forest Ecologist, Forest Fire Planner, Forest Hydrologist**
25. Insects and Disease Insects and diseases are an integral disturbance agent in the forest ecosystem; however, the goal is to prevent epidemics outside the normal range of disturbance.	What are the extent of outbreaks and infestations? What are the trends? Are trends related to causal events or conditions and what are those? Are areas identified in the Risk mapping showing evidence of outbreaks and infestations and what are they? What are the responses to insects and disease related to fire impacts?	Acres of stands affected by the various disturbance agents (insects and disease) Impact of Sudden Oak Death (acres affected, acres treated, acres at risk, acres under quarantine)	Regional Office Forest Health Protection aerial surveys – review for status and trends, forest level –broad-scale District level surveillance for localized outbreaks and infestations Individual studies on select projects Risk Mapping of insect and disease areas for Farm Bill **Forest Health Protection Program Managers**

(vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities. **Note - This is supposed to be related to questions and associated indicators addressing the plan contributions to communities, social and economic sustainability of communities, multiple use management in the plan area, progress toward meeting desired conditions and objectives related to social and economic sustainability. Ecosystem services are mentioned in this description in the handbook.**			
Maintenance and Enhancement of Social, Economic and Cultural Benefits (from 1909.12, Chapter 30 FS handbook)			
26. Social and Economic status Contribution of timber, forest products and the recreation program to social and economic stability.	What are the annual timber targets? What are the trends? What are the special forest products and what are the trends in their use? What are the effects of the recreation and lands special uses programs?	Levels of production of multiple uses including timber, special forest products and recreational visits and their connected economic benefits Qualitative economic effects on the surrounding communities from lands and recreational special uses	Annual accomplishment reports, periodic census data for social and economic reporting SUDS reporting **Forest Timber Program Manager** **Forest Recreation Program Manager**
27. Transportation System (Roads) Goal – to plan, operate and maintain a safe and economical transportation system providing efficient access for the movement of people and materials involved in the use and protection of NFS lands.	Are road densities meeting forest-wide and allocation specific guidelines? How many miles of roads have been constructed? How many road miles have been closed? How many road miles have been decommissioned? What are the trends and what is affecting those trends?	Miles of open roads by 6th field watershed (aka 12-digit) Miles of roads closed per year Miles of roads decommissioned per year Miles of roads constructed per year Miles of roads maintained per year	INFRA and GIS database for roads info Annual Accomplishment report using INFRA for miles of closed and miles of decommissioned, report is generated from INFRA by district, forest etc. Data from Travel Analysis (subpart A) carried into landscape NEPA projects for decisions **Forest Roads Manager**

28. Cultural Resource Goal – To provide for the protection and preservation of prehistoric and historic sites, buildings, objects, and antiquities of local, Regional or National significance.	Are significant historic and prehistoric sites and properties being maintained, stabilized, and repaired according to preservation standards?	Status of select historic and prehistoric sites and properties	Monitoring data and site condition assessments where applicable **Forest Heritage Program Manager**
29. Invasive Plant Species Goal - Invasive species are being managed to reduce or eliminate the impacts to native plant and vegetative communities.	Are invasive plant species being treated and are invasive plant populations being reduced in treated areas?	Population trends in treated sites	Field survey and treatment records NRM:TESP-IS database FACTS database GIS Analysis **Forest Botanist**
Wilderness (Management Area 6)			
30. Preserve wilderness character Allow for natural processes and provide opportunities for solitude, challenge, and inspiration and within these constraints to provide for recreational, scenic, scientific, educational, conservation and historical uses.	Is the wilderness character being preserved and protected? Are the physical / biological, managerial and social settings of each Wilderness Resource Spectrum (WRS) maintained consistent with the standards for wilderness management?	Resources and/or experience quality degraded through inappropriate uses and/or behaviors of visitors Trends in wilderness character	Wilderness Performance Program Score Card – 10 elements achieved or sustained Status of each wilderness as described in the Wilderness Performance Program Score Card Wilderness monitoring data **Forest Recreation Program Manager**
Conservation of Eligible Wild and Scenic River Status			
31. Eligible Streams and Rivers Maintain character of rivers and streams eligible for Wild and Scenic Rivers designation as described in the LRMP.	Are we protecting the future eligibility/ suitability and potential classification of our eligible rivers? How is that protection being maintained?	Change to the characteristics affecting eligibility which include free flow, water quality, and outstanding remarkable values	Reviews of project planning documents and ongoing actions (e.g., road maintenance) Field monitoring for implementation and effectiveness of mitigation to protect eligible rivers **Forest Recreation Program Manager with Forest Hydrologist and Forest Fisheries Biologist**

Conservation of Designated Wild and Scenic Rivers (WSR)			
32. Designated River and Streams Maintain the Wild, Scenic, or Recreation River character of streams designated by Congress as Wild and Scenic Rivers.	Are we protecting the outstandingly remarkable values of the Congressionally designated rivers? Has Section 7(a) reviews been conducted when instream work is planned? Have River Management Plans been completed?	Change to the characteristics affecting Wild and Scenic Rivers which are free flowing, water quality, and outstanding remarkable values Change in ORVs or status of ORVs based on planning analysis Status of River Management Plans	Reviews of project planning documents and ongoing actions within WSR corridors Field monitoring for implementation of mitigation to protect designated rivers and effectiveness of those measures Inspection and compliance results for conservation easements **Forest Recreation Program Manager with Forest Hydrologist and Forest Fisheries Biologist**
(viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land.			
32. Soils Maintain or enhance long-term soil productivity.	Are management activities being implemented so that they do not substantially and permanently impair the productive capacity of the land?	Extent of detrimental soil disturbance within activity areas	Management activity soil monitoring **Forest Soil Program Manager**